

IN THE CLAIMS:

The following is a complete listing of the claims in this application, reflects all changes currently being made to the claims, and replaces all earlier versions and all earlier listings of the claims:

1. (original): A method of measuring performance parameters of an imaging device, said method comprising the steps of:

maintaining a test pattern image, said test pattern image comprising alignment features and image analysis features;

imaging a test chart using said imaging device to form a second image, said test chart containing a representation of said test pattern image;

registering said test pattern image and said second image using region based matching operating on said alignment features; and

measuring said performance parameters by analysing said image analysis features.

2. (previously presented): The method as claimed in claim 1, wherein said imaging device is a camera, and said test chart is a self-luminous device displaying said test pattern image.

3. (original): A method of measuring performance parameters of a printer, said method comprising the steps of:

maintaining a test pattern image, said test pattern image comprising alignment features and image analysis features;

printing said test pattern image using said printer to form a test chart;
imaging said test chart using a calibrated imaging device to form a second image;
registering said test pattern image and said second image using region based
matching operating on said alignment features; and
measuring said performance parameters by analysing said image analysis features.

4. (previously presented): The method as claimed in any one of claims 1 and 3,
wherein different colour channels in said test pattern image and said second image are separately
registered and analysed.

5. (previously presented): The method as claimed in any one of claims 1 and 3,
wherein said region based matching uses overlapping blocks of image data from said test pattern
image and said second image.

6. (previously presented): The method as claimed in any one of claims 1 and 3,
wherein said analysis features are said alignment features.

7. (previously presented): The method as claimed in any one of claims 1 and 3,
wherein said region based matching is block based correlation.

8. (previously presented): The method as claimed in any one of claims 1 and 3,
wherein said registering step comprises the sub-steps of:

performing block based correlation on said test pattern image and said second image to determine a displacement map for mapping pixels of said test pattern image to corresponding pixels of said second image;

interpolating said displacement map to form a distortion map; and

warping said test pattern image using said distortion map.

9. (previously presented): The method as claimed in any one of claims 1 and 3, wherein said measuring step includes comparing pixel values of corresponding pixels in said test pattern image and second image after said images have been registered.

10. (previously presented): The method as claimed in any one of claims 1 and 3, wherein said test pattern image is generated by the steps of:

(a) dividing an image area into a predetermined number of areas;

(b) dividing each of said areas into smaller areas;

(c) within each area, assigning properties to at least one of said smaller areas, and designating the remainder of said smaller areas as areas;

(d) generating pixel values for said at least one of said smaller areas, said pixel values being in accordance with said properties; and

(e) repeating steps (b) to (d).

11. (original): The method as claimed in claim 10, wherein said properties are randomized.

12. (previously presented): The method as claimed in claim 10 , wherein said at least one of said smaller areas is selected randomly.

13. (previously presented): The method as claimed in claim 10 , wherein said properties are one or more of:

colour;

slowly varying colour;

pattern with predetermined frequency distribution;

pattern with predetermined orientations; and

pseudo-random noise.

14. (previously presented): A method as claimed in claim 1, wherein said test pattern image is generated through the steps of:

(a) dividing an area into a predetermined number of smaller areas;

(b) selecting at least of said smaller areas;

(c) generating pixel values for the selected smaller areas, said pixel values being in accordance with assigned properties;

(d) designating each of the unselected smaller areas as areas; and

(e) repeating steps (a) to (d) iteratively for each of the areas.

15. (original): The method as claimed in claim 14, wherein said properties are randomized.

16. (previously presented): The method as claimed in claim 14 , wherein said at least one of said smaller areas is selected randomly.

17. (previously presented): The method as claimed in claim 14 , wherein said properties are one or more of:

colour;

slowly varying colour;

pattern with predetermined frequency distribution;

pattern with predetermined orientations; and

pseudo-random noise.

18. (canceled).

19. (previously presented): The method as claimed in claim 10 , wherein a test pattern corresponding to said test pattern image is a dyadic test pattern.

20. (original): Apparatus for measuring performance parameters of an imaging device, said apparatus comprising:

means for maintaining a test pattern image, said test pattern image comprising alignment features and image analysis features;

means for receiving a second image, said second image being an image captured by said imaging device of a test chart, and said test chart containing a representation of said test pattern image;

means for registering said test pattern image and said second image using region based matching operating on said alignment features; and

means for measuring said performance parameters by analysing said image analysis features.

21. (original): Apparatus for measuring performance parameters of a printer, said apparatus comprising:

means for maintaining a test pattern image, said test pattern image comprising alignment features and image analysis features;

said printer for printing said test pattern image to form a test chart;

a calibrated imaging device for imaging said test chart to form a second image;

means for registering said test pattern image and said second image using region based matching operating on said alignment features; and

means for measuring said performance parameters by analysing said image analysis features.

22. (previously presented): Apparatus as claimed in claim 20 wherein said means for maintaining a test pattern image comprises:

means for dividing an area into a predetermined number of smaller areas;

means for selecting at least one of said smaller areas;

means for generating pixel values for the selected smaller areas, said pixel values being in accordance with assigned properties;

means for designating each of the unselected smaller areas as areas; and

means for iteratively passing control to said means for dividing , said means for selecting, said means for generating pixel values, and said means for designating.

23. (canceled).

24. (currently amended): A non-transitory computer-readable medium storing a computer program for measuring performance parameters of an imaging device, said computer program when executed on a computing device ~~performs~~ performing the steps of:

maintaining a test pattern image, said test pattern image comprising alignment features and image analysis features;

imaging a test chart using said imaging device to form a second image, said test chart containing a representation of said test pattern image;

registering said test pattern image and said second image using region based matching operating on said alignment features; and

measuring said performance parameters by analysing said image analysis features.

25. (currently amended): A non-transitory computer-readable medium storing a computer program for measuring performance parameters of a printer, said computer program when executed on a computing device ~~performs~~ performing the steps of:

maintaining a test pattern image, said test pattern image comprising alignment features and image analysis features;

printing said test pattern image using said printer to form a test chart;

imaging said test chart using a calibrated imaging device to form a second image;
registering said test pattern image and said second image using region based matching operating
on said alignment features; and

measuring said performance parameters by analysing said image analysis features.

26. (currently amended): A non-transitory computer-readable medium as claimed
in claim 24, wherein said test pattern image is generated through the steps of:

- (a) dividing an image area into a predetermined number of smaller areas;
- (b) selecting at least one of said smaller areas;
- (c) generating pixel values for the selected smaller areas, said pixel values being
in accordance with assigned properties;
- (d) designating each of the unselected smaller areas as areas; and
- (e) repeating steps (a) to (d) iteratively for each of the areas.

27. – 33. (canceled).